

## SYLLABUS

**1. Course title:**

GEOLOGY, MINERALOGY AND PETROGRAPHY

**2. Code:**

LRUDOGMP

**3. Cycle of study:**

1

**4. ECTS credits:**

7

**5. Type of course:**

Mandatory

**6. Prerequisites:**

No

**7. Class restrictions:**

No

**8. Duration / semester(s):**

1

1

**9. Weekly contact hours and student workload:**

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)
9.1. Lectures	6			Classes: 78,75
9.2. Seminars	1			Individual work: 96,83
9.3. Laboratory / Practice classes	0			In total: 175,58

**10. Faculty:**

Mining, Geology and Civil Engineering

**11. Department/study program:**

Mining Engineering

**12. Lecturer:**

PhD Zijad Ferhatbegović Associate Professor

**13. Course aims:**

The goal of this course is to define the main concepts of minerals and rocks from general and systematic mineralogy, as well as the petrology of igneous, metamorphic, and sedimentary rocks. It aims to train students to recognize and classify minerals and rocks based on their properties.

#### 14. Learning outcomes:

At the end of the course, successful students will be equipped to apply the knowledge they have acquired in the field and in practice. Specifically, they will be able to recognize minerals and rocks that are exploited as building materials, architectural stone, or as metallic and non-metallic mineral raw materials.

#### 15. Course content:

Familiarization with the composition and spherical structure of the Earth and the Earth's crust, geodynamic endo- and exo-movements, and processes occurring in the lithosphere and its surface, as well as elements of dynamic, historical, engineering geology, stratigraphy, and geological mapping. How to distinguish minerals, rocks, and ores in the field.

- Basic concepts of crystallography
- Crystal systems: Cubic, tetragonal, hexagonal, orthorhombic, monoclinic, triclinic, crystal twinning, types and methods
- Mineral structure, composition, crystallization conditions, crystallochemistry
- Geochemistry and genesis of minerals
- Mineral classification: Silicate and non-silicate minerals
- Macroscopic determination of silicate and non-silicate minerals
- Basic concepts of rocks
- Igneous rocks, magmatic crystallization, differentiation, textures and structures
- Classification of igneous rocks
- Sedimentary rocks, diagenesis
- Classification of sedimentary rocks
- Metamorphic rocks, formation processes
- Metamorphic facies
- Classification of metamorphic rocks
- Macroscopic determination of different types of rocks
- Application of different types of rocks in mining.

#### 16. Learning methods:

- Lectures, exercises, and consultations
- Lectures and exercises are interactive and practical in nature
- Seminar paper

#### 17. Assessment methods:

The methods of assessing students' knowledge include the following criteria:

- Attendance and participation in class
- Tests
- Final oral/written exam

#### 18. Assessment components:

##### GRADING SYSTEM

Student's obligations	Points
Attendance	10
Activity	10
Test I	10
Test II	30
Pre-exam activities	60
Final oral/written exam	40
Total points	100

The final success of the student, after all prescribed forms of knowledge assessment, is evaluated and graded using a system comparable to the ECTS grading scale as follows:

- 10 (A) - Outstanding performance with no errors or minimal errors, 95-100 points
- 9 (B) - Above average, with some errors, 85-94 points
- 8 (C) - Average, with noticeable errors, 75-84 points
- 7 (D) - Generally good, but with significant shortcomings, 65-74 points
- 6 (E) - Meets the minimum criteria, 54-64 points
- 5 (F, FX) - Does not meet the minimum criteria, less than 54 points

#### 19. Mandatory reading list:

1. Salihović, S. (2001): "Kristalografija", RGGF Tuzla,;
2. Bermanec, V. (1999): "Sistematska mineralogija" Targa Zagreb,
6. Đorđević-Đorđević-Milovanović (1991): "Osnovi petrologije", Beograd,

---

**20. Additional reading list:**

---

**21. Web sources:**

---

**22. Applicable from the academic year:**

---

**23. Adopted in the Faculty/Academy session:**